




AQA GCSE PE: Paper 1 Revision Checklist

3.1.1. Applied anatomy and physiology					
Topic	Contents	Additional information			
The structure and functions of the musculoskeletal system	Bones	<i>Identify and locate - Cranium, vertebrae, ribs, sternum, clavicle, scapula, pelvis, humerus, ulna, radius, carpals, metacarpals, phalanges, femur, patella, tibia, fibula, tarsals and metatarsals</i>			
	Structure of the skeleton	How the skeletal system provides a framework for movement; <i>shape type of the bones, skeletal system allows movement</i>			
	Function of the skeleton	<i>Describe & give examples - Functions Support, posture, protection, movement, blood cell production, storage of minerals</i>			
	Structure of the synovial	Identify and describe the following structures of a synovial joint; <i>synovial membrane, synovial fluid, joint capsule, bursae, cartilage, ligaments</i>			
	Joints	Elbow, knee and ankle – <i>hinge joint</i> Hip and shoulder – <i>ball and socket</i>			
	Movement at the joint	Flexion/extension <i>at the shoulder, elbow, hip and knee</i> ; Abduction/adduction <i>at the shoulder</i> Rotation <i>of the shoulder</i> ; Plantar flexion/dorsiflexion <i>at the ankle</i> To provide sporting examples			
	Muscles of the body	Identify and locate - <i>Deltoid, trapezius, latissimus dorsi, pectorals, biceps, triceps, abdominals, quadriceps, hamstrings, gluteals, gastrocnemius</i>			
	Muscular system	Reference to the shoulder, elbow, hip, knee and ankle joints: Major muscle groups operating at these joints, agonists/antagonists, bones located at the joint, muscle groups work isometrically and isotonicly (concentric/eccentric)			
The structure and functions of the cardio-respiratory	The pathway of air	Identification of the pathway of air; <i>mouth/nose, trachea, bronchi, bronchioles, lungs, alveoli.</i>			
	Gaseous exchange	Gas exchange at the alveoli – features that assist in gaseous exchange: <i>large surface area of alveoli, moist thin walls (one cell thick), short distance for diffusion (short diffusion pathway), lots of capillaries, large blood supply, movement of gas from high concentration to low concentration</i>			
	Blood vessels	Structure of arteries, capillaries and veins: <i>size/diameter, wall thickness, valves in veins.</i> How the structure of each blood vessel relates to the function: carrying <i>oxygenated/ deoxygenated blood to/ from the heart, gas exchange, blood pressure, redistribution of blood during exercise (vasoconstriction and vasodilation).</i>			
	Structure of the heart	Structure of the heart: <i>atria (left and right atria), ventricles (left and right ventricles).</i>			
	Cardiac Cycle	Pathway of the blood: <i>deoxygenated blood into right atrium, then into the right ventricle, the pulmonary artery then transports deoxygenated blood to the lungs, gas exchange occurs (blood is oxygenated), pulmonary vein transports oxygenated blood back to the left atrium, then into the left ventricle, before oxygenated blood is ejected and transported to the body via the aorta.</i>			

	Cardiac output, stroke volume and heart rate	Identification of the following volumes on a spirometer trace and an understanding of how these may change from rest to exercise: <i>tidal volume, expiratory reserve volume, inspiratory reserve volume, Residual volume.</i>			
	Mechanics of breathing	Inhaling (at rest) with reference to the roles of the: <i>intercostals, rib cage, diaphragm.</i> Exhaling (at rest) with reference to the roles of the: <i>intercostals, rib cage, diaphragm.</i>			
	Interpretation of a spirometer trace	Identify and describe the following volumes on a spirometer trace; <i>tidal volume, inspiratory reserve volume, expiratory reserve volume and residual volume.</i>			
Anaerobic and aerobic system	Aerobic and anaerobic	Define aerobic and anaerobic <i>and along with practical examples of sporting situations to them.</i>			
	EPOC	Define excessive post-exercise oxygen consumption and describe EPOC is caused by anaerobic exercise			
	Recovery process	Cool down- <i>maintain elevated breathing rate/heart rate (blood flow), stretching, removal of lactic acid, Manipulation of diet - rehydration, carbohydrates for energy, ice baths/massage - prevention of delayed onset of muscle soreness (DOMS).</i>			
The short and long term effects	Immediate effects of exercise	During exercising			
	Short term effects	24-36 hours			
	Long term effects	Months and years of exercising			
3.2.1 Movement Analysis					
Lever System	First, second and third class lever system	Identify of first, second and third class lever systems. Basic drawing of the three classes of level to illustrate the positioning of: <i>Fulcrum, load (resistance), effort.</i>			
	Mechanical advantage	An understanding of mechanical advantage in relation to the three lever systems. Label the effort arm and load/resistance arms on the three classes of lever. Mechanical advantage = effort arm / weight (resistance) arm.			
Planes and axes	Planes and axes movement	Identification of the relevant planes (<i>frontal, transverse, sagittal</i>) and axes (<i>longitudinal, transverse, sagittal</i>) of movement used whilst performing sporting actions.			

3.1.3 Physical training

Health and fitness	Health and fitness	Define the terms			
	Relationship between health and fitness	Describe the relationship between health and fitness			
Components of fitness	Components of fitness	<i>Agility, balance, cardiovascular endurance, coordination, flexibility, muscular endurance, power/explosive strength, reaction time, strength (maximal, dynamic and explosive), speed</i> Understand and justify why the components of fitness may or may not be needed when performing certain physical activities and sports.			
	Fitness testing	Reasons and limitations of the fitness testing.			
	Measuring the components of fitness	<i>Illinois agility test, stork balance, multi-stage fitness test, coordination, flexibility, muscular endurance, power/explosive strength, reaction time, maximal strength, speed, strength</i> Testing procedure refers to 'how each test is carried out'			
	How data is collected for components of fitness	How to record the data (e.g. cms, levels, seconds) Definitions of the terms <i>qualitative</i> and <i>quantitative</i> .			
Principle of training	Principles of training	SPORT (<i>Specificity, progressive overload, reversibility, tedium</i>) FITT (<i>Frequency, intensity, time, type</i>).			
	Applications of the principles of training	How the principles of training can be applied to bring about improvements in fitness.			
	Types of training	Understand the distinctions between different types of training; <i>Circuit training, continuous training, fartlek training, interval training, static stretching, weight training, plyometric training</i>			
	Advantages and disadvantages of training types	The advantages and disadvantages of each type of training method stated above. Students should be taught to select and evaluate fitness needs and make links to sporting activity.			
3.13.4 How to optimise training and prevent injury					
Training threshold	Training threshold	Definition of training threshold. Calculate the aerobic/anaerobic training; <i>calculate the maximum heart rate (220 minus age), calculate aerobic training zone (60-80%) and anaerobic training (80-90%)</i>			

Prevent injury	Considerations to prevent injury	The following factors should be taken into account in order to prevent injury; <i>a warm up, avoid over training, appropriate clothing and footwear, taping/bracing, hydration, avoid overstretching, techniques used correctly, appropriate rest for recovery.</i>			
	Prevention of injury	Identify potential hazards in a <i>sports hall, fitness Centre, playing field, artificial outdoor areas, swimming pool</i> and how to reduce them			
Optimise training	Specific training	How high altitude training is carried out; <i>train at high altitude, there is less oxygen in the air and oxygen capacity is reduced, the body compensates by making more red blood cells to carry oxygen.</i>			
	Seasonal aspects	Names of the three training seasons; <i>pre-season/preparation, competition/peak/playing season, post-season/transition.</i> To be able to understand the benefits for each season to the performer.			
Effective use of warm up and cool down	Warming up and cooling down	The constituent parts of warming up and cooling down. Warming up should include; <i>gradual pulse raising activities, stretching, skill based practice, mental preparation increase amount of oxygen to the working muscles.</i> Cool down should include; <i>maintain elevated breathing and heart rate, gradual reduction in intensity, stretching.</i>			
	Benefits of warming up and cooling down	The benefits of warming up; <i>effects on body movement, range of movement increased, psychological preparation, injury prevention, practice of movement skills through the whole range of movement and gradual increase of effort to full pace.</i> The benefits of cooling down; <i>allowing the body to recover, the removal of lactic acid/CO₂/waste products, prevent (delayed onset of) muscle soreness/ DOMS.</i>			
3.1.4 Use of data					
Demonstrated an understanding of how data are collected	Quantitative data	Quantitative data deals with numbers. Methods of collecting quantitative data; <i>questionnaires, surveys.</i>			
	Qualitative data	<i>Qualitative data deals with description.</i> Methods of collecting qualitative data; <i>interviews, observations.</i>			
	Present data	How to present data in tables. How to plot basic; <i>bar charts, line graphs.</i> How to label x and y axes on bar charts and line graphs/			
	Analysis and evaluation of data	Interpretation of data presented in basic; <i>tables, bar charts, line graphs, pie charts.</i>			